Trans-Lake Washington Project

Draft TDM Element of Trans-Lake Multimodal Alternatives

April 2001

Washington State Department of Transportation

Sound Transit

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Overview

- TDM is assumed as part of the multimodal alternatives for further study in the EIS.
- The major components of the multimodal alternatives include:
  - Highway/HOV improvement options
  - High Capacity Transit
  - TDM program components

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TDM Recommendations from 1999 Trans-Lake Washington Study

- Analyze TDM strategies that build on and expand on commute trip reduction programs
- Analyze effect of committing "substantial resources" to TDM
- Include land use actions and trip reduction measures, while enhancing commercial traffic mobility

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Study Committee Recommendations (continued)

- Develop interlocal corridor agreement
  - include trip reduction goals with milestones and monitoring plans
  - include cooperative funding plans
  - include incentive programs for employers, developers and others to reduce trips

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Analysis for TDM Element Involves

- Review area programs and policies and interview local jurisdictions
- Draw on I-405 TDM Program, previous Trans-lake Study and Destination 2030 work products
- Analyze transportation forecasts and existing conditions data
- Develop and refine TDM element of multimodal alternatives
- Evaluate effectiveness, add details, develop cost estimates

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Developing a Corridor-based TDM Program

- Support Project Purpose and Need:
  - Improve mobility for people and goods across Lake Washington within the SR 520 corridor from Seattle to Redmond in a manner that is safe, reliable, and cost-effective, while avoiding, minimizing and/or mitigating impacts on affected neighborhoods and the environment.

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TDM Goals and Objectives (Draft Proposal)

Goals

- Reduce Vehicle Trips by increasing market share of carpools, transit, vanpools and non-motorized modes
- Shift trips from peak times
- Shorten or eliminate trips

Objectives

- Improve corridor mobility by managing demand
- Improve efficiency of transportation system
- Apply resources to maximize mobility benefits to the corridor
- Complement regional, corridor and local transportation programs

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Major Characteristics of the SR 520 Corridor

- Relatively high transit ridership and service
  - highest on the Eastside, connecting to Seattle's highest ridership and service areas

- The Eastside's most P&R lots (12) and highest utilization rates
- One of the area's highest average car occupancy rates
- Highest volume-to-capacity ratios
- Slowest vehicle speeds for both GP and HOV travel (<30 mph)

Source: 1997 Congestion Management System Performance Report, PSRC

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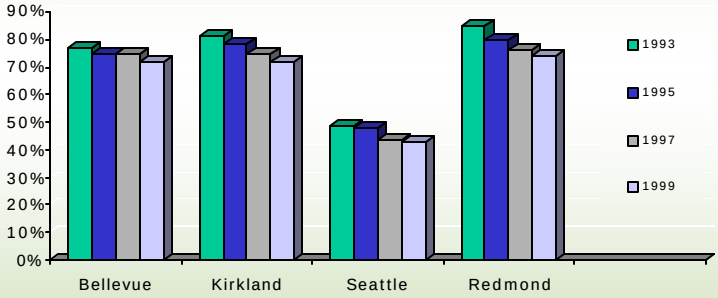
The Rate of Drive-alone Trips Is Lower

CTR Program Reductions from 1993 to 1999 for employers with 100 or more people:



* CTR Program Results for 1993 to 1999. Source: WSDOT Office of Public Transportation and Rail.

Work trips are a large share of peak trips on SR 520. On SR 520, 88% of AM Peak and 69% of PM Peak across the lake were identified as work-related, based on the 1999 O/D Survey for Trans-Lake. This is a higher rate than shown in regional data sources.

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Non-Commute Trips Are Important

- Commercial trips
  - Freight transport
  - Service and business trips
- Trips for
  - Special events (sports, cultural)
  - School
  - Shopping, dining, entertainment
  - Other personal trips
- Less available data on these trips

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Proposed TDM Program Elements and Their Potential

TDM Element	Type of Trip			Trip Reduction Effect		
	Work	Non-Work	Comm'l	Shift Mode	Shift To Off-Peak	Shorten or Eliminate
Vanpooling	▸			▸		
Public Information and Promotion	▸	▸	▸	▸	▸	▸
Employer-Based	▸			▸	▸	▸
TDM-Supportive Land Use	▸	▸	▸	▸		▸
Public/Private Incentives	▸	▸	▸	▸	▸	▸
Pricing (Tolls or other travel costs)	▸	▸	▸	▸	▸	▸

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Proposed TDM Program Elements

TDM Element	Objectives
Vanpooling	• Substantially increase market share of vanpools • Make vanpools easier to form and use • Provide incentives to employers and individuals
Public Information and Promotion	• Focus on individual trip decisions. • Improve information services and understanding of trip choices through centralized information center • Provide special promotions or incentives, such as "Flash your pass" discounts.
Employer-Based	• Target trip reduction to employers not currently covered by CTR law • Provide technical assistance and incentives (tax credits, etc.) and subsidies (flexpass, parking cash out). • Encourage flexible work schedule and location options, including telecommuting.

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Proposed TDM Program Elements (continued)

TDM Element	Objectives
TDM-Supportive Land Use	• Provide technical assistance and a funding pool to support transit oriented developments. • Support jurisdictional implementation of transportation-efficient land use actions • Provide incentives for individuals and businesses to locate in transportation-efficient areas. • Provide funding support for local connectivity improvements.

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Proposed TDM Program Elements (continued)

TDM Element	Objectives
Public/Private Incentives	• Provide support and incentives to businesses and organizations to reduce non-work vehicle trips and/or shift trips to off-peak. • Targets could include housing developments, retail centers, special event facilities, businesses (including freight transport and services). • Support individual incentive programs such as location-efficient mortgages,"One Less Car" campaigns, or car-share programs. • Provide funding for innovative public/private partnerships such as leased lots to support carpools, special event ridesharing, or shuttles.
Pricing (Tolls or other added travel costs)	• Reduce trips by increasing trip costs. • Consider techniques that manage demand by mode, time of day, etc. Options include tolls, HOT lanes and parking costs.

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TDM-Supportive Services & Facilities

- Added or expanded park-and-rides
- Shuttles or circulators
- Increased transit frequency or improved routes in underserved or over-capacity areas

Actions	Type of Trip			Trip Reduction Effect		
	Work	Non-Work	Comm'l	Shift Mode	Shift To Off-Peak	Shorten or Eliminate
TDM-Supportive Services & Facilities	▶	▶		▶	▶	▶

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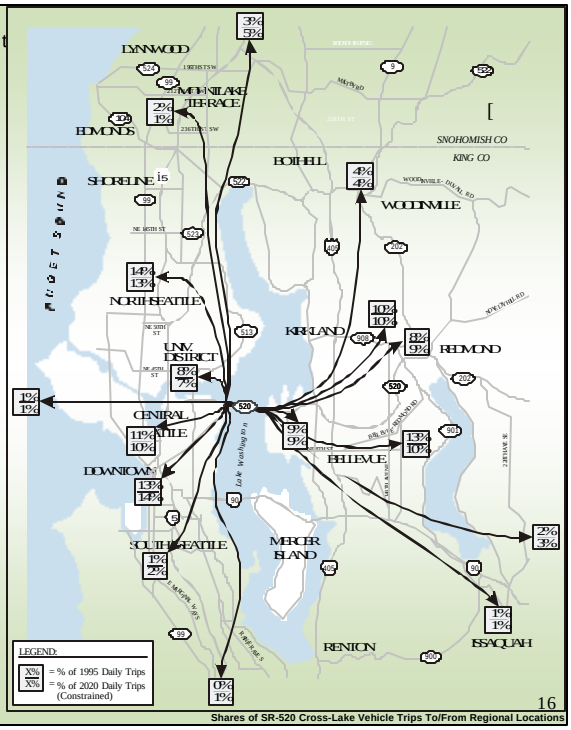
Analysis Focus Areas

- Downtown Seattle
- Downtown Bellevue
- University District
- Downtown Redmond
- Overlake
- Central Seattle
- North Seattle
- Kirkland



Shares of SR-520 Cross-Lake Vehicle Trips To/From Regional Locations

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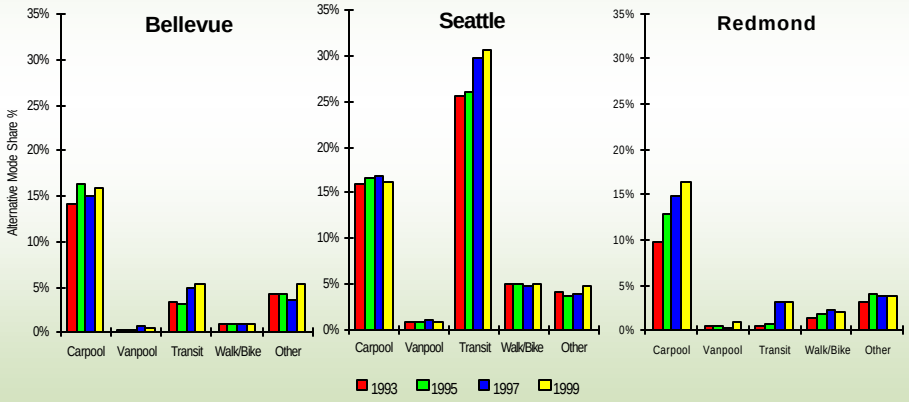
Mode Shift Trends for Large Employers



* CTR Program Results for 1993 to 1999. Source: WSDOT Office of Public Transportation and Rail.

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Model Results Show a Significant Increase in HOV/Transit Vehicle Trips

	HOV (3+)
1995	**700**
% of vehicles	**1%**
2020 No Action	**4,800**
% of vehicles	**4%**
2020 with HOV	**11,500**
% of vehicles	**9%**
2020 with HOV+GP	**12,700**
% of vehicles	**7%**

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Model Results Show that HOV and Transit Person Trips Will Increase

	HOV (3+)	Transit
1995	**2,300**	**8,700**
% of all trips	**2%**	**7%**
2020 No Action	**15,200**	**23,200**
% of all trips	**10%**	**15%**
2020 with HOV	**36,300**	**51,300**
% of all trips	**18%**	**25%**
2020 with HOV+GP	**40,100**	**56,100**
% of all trips	**15%**	**21%**

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What Could Account for these Mode Shift Predictions?

- Congestion in the GP lanes will make non-HOV trips less attractive.
- HOV lanes will make transit and carpooling more attractive and competitive.
- Substantial TDM programs
- Future population and employment growth is focused in the centers

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Data Sources

- Several good sources for TDM data
  - Vanpool market studies
  - Commute Trip Reduction data
  - TDM planning guide
  - Other local and national case studies
  - Puget Sound Regional Council panel surveys
- Some limitations to corridor-specific data

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Potential Cost and Effectiveness Ranges

TDM Element	20-year Costs*	Effectiveness Estimates** (Reduction in Daily VMT)
Vanpooling	$60 Million to $160 Million	Up to 8% by worksite +2.5% with fare subsidy
Public Information and Promotion	$10 Million to $30 Million	0.25% to 0.75%***
Employer-Based	$90 Million to $180 Million	2 to 20% by worksite
TDM-Supportive Land Use	$20 Million to $60 Million	Up to 10% in subareas, and up to 50% of peak work trips
Other Public/Private Incentives	$40 Million to $80 Million	Undetermined
Pricing (Tolls or other travel costs)	Revenue generation	6 to 10%
TDM Supportive Services and Facilities	$80 Million to $100 Million	0.5% to 3%
Trip Reduction Monitoring	$2 million	N/A
TOTAL	$250 Million to $500 million	To be determined

* I-405 EIS and PSRC Destination 2030 (Draft) as general sources. Cost estimates for Trans-lake will be developed based on additional analysis.

** Based on previous Trans-Lake Washington Study estimates. *** Based on I-405 EIS estimates

Next Steps

- Effectiveness estimates will be compared to current and forecast corridor conditions
  - Vehicle and person trip volumes
  - Existing and planned services/facilities
  - Mode split
  - Origin/Destination Patterns
  - Trip purpose and trip length
  - Travel time/speed competitiveness
  - Population and employment growth plans by subarea
  - CTR data by subarea
  - Surveys

Next Steps

- Analysis will be used to:
  - Rate the effectiveness of the TDM investment for each multimodal alternative
  - Identify where additional resources would increase potential benefits
  - Suggest most promising TDM strategies by subarea
  - Suggest specific implementation steps